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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,302	06/13/2001	Patrick L. Connor	42390P11642	6775

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EXAMINER	
ENGLAND, DAVID E	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/881,302	CONNOR, PATRICK L.	
	Examiner	Art Unit	
	David E. England	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-12 and 14-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-12 and 14-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

PL

DETAILED ACTION

1. Claims 1 – 3, 5 – 12 and 14 – 17 are presented for examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 – 3, 5 – 12 and 14 – 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. In claims 1 and 10, the limitation of, "indicating said packet array to a protocol stack if said resource state comprises a low resource state to reduce copying of packets between buffers" is not stated in a manner that would be conclusive to the act of indicating said packet array would "reduce copying of packets between buffers". Furthermore, the Applicant's specification is void of how this is carried out. In multiple sections of the specification, the Applicant's invention states "copying" data when indicating a packet array to a protocol stack if said resource state is a low state, (Applicant's specification, page 11, lines 9 – 11, *"When a packet indicates a low resource state, this causes the NDIS interface or a protocol in the protocol stack, such as*

TCP/IP, ***to copy the packet to a separate buffer before processing it.*** *"* & page, 15, lines 10 – 13, *"If the resource state is low, processing logic 400 indicates the packet array to the protocol stack at block 414. The packet array me be stored in a first buffer owned or managed by the device driver as it is being constructed, either by* ***physically copying each packet to the first buffer*** *or constructing a logical packet array using linked lists or pointers."* & page 15, line 22 et seq. *"Once the device driver indicates the packet array to the protocol stack, the protocol stack or the NDIS interface may attempt to return resources to the device* ***driver by copying certain packets from the packet array*** *to the buffers owned by the NDIS interface or the protocol stack."*

5. All other claims are rejected for their dependency on claims 1 and 10 above.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2, 5 – 8, 10, 11 and 14 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duvvuru et al. (6765916) (hereinafter Duvvura) in view of Wilson et al. (6651117) (hereinafter Wilson).

8. Referencing claim 1, as closely interpreted by the Examiner, Duvvura teaches a computer-implemented method to manage a packet array, comprising:

9. receiving a packet by a device driver, (e.g., col. 12, lines 6 – 54);

10. determining a resource state for said device driver, (e.g., col. 12, lines 6 – 54);

11. setting a resource state indicator for said packet based on said resource state, (e.g., col. 12, lines 6 – 54);

12. adding said packet to a packet array, (e.g., col. 12, lines 6 – 54); and

13. indicating said packet array to a protocol stack if said resource state comprises a low resource state, (e.g., col. 12, lines 6 – 54), but does not specifically reducing copying of packets between buffers.

14. Wilson teaches reducing copying of packets between buffers, (e.g., col. 3, lines 2 – 32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wilson with Duvvuru because reducing the times a system copies packets between buffers will lead to a system that has more memory which could be used for more communication actions.

15. Referencing claim 2, as closely interpreted by the Examiner, Duvvuru teaches

16. comparing said resource state to a predetermined threshold, (e.g., col. 12, lines 6 – 54); and

17. setting a resource state indicator in accordance with said comparison, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54).

18. As per claim 5, as closely interpreted by the Examiner, Duvvuru teaches said packet array has a length of 1-N, (e.g. col. 12, lines 6 – 54).

19. Referencing claim 6, as closely interpreted by the Examiner, Duvvuru teaches said packet array is stored in a first buffer, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54).

20. Referencing claim 7, as closely interpreted by the Examiner, Duvvuru teaches said resource state indicator is an explicit resource state indicator, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54).

21. Referencing claim 8, as closely interpreted by the Examiner, Duvvuru teaches receiving said packet array, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54);

22. determining an implicit resource state for each packet in said packet array, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54); and

23. transferring each packet having an implicit resource state below a predetermined threshold from said first buffer to a second buffer, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54), but does not specifically teach copying from a first buffer to a second buffer. Wilson teaches copying from a first buffer to a second buffer, (e.g., col. 7, lines 13 – 38). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wilson with Duvvuru because if the resource state is below the threshold then the system would have the extra resources to provide memory space to copy data between buffers. Furthermore, copying

data in-between buffers that have the capacity to hold said data, is well known in the art and would only take routine skill in the art to implement.

24. Claims 10, 11 and 14 – 17 are rejected for similar reasons stated above.

25. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duvvuru and Wilson as applied to claims 1, 2, 10 and 11 above, and in view of Shinohara (5901139).

26. As per claim 3, as closely interpreted by the Examiner, Duvvuru and Wilson do not specifically teach said setting said resource state indicator in accordance with said comparison comprises:

27. setting said resource state indicator to normal if said resource state is above or equal to said predetermined threshold; and

28. setting said resource state indicator to low if said resource state is below said predetermined threshold.

29. Shinohara teaches said setting said resource state indicator in accordance with said comparison comprises:

30. setting said resource state indicator to normal if said resource state is above or equal to said predetermined threshold, (e.g. col. 7, lines 4 – 27); and

31. setting said resource state indicator to low if said resource state is below said predetermined threshold, (e.g. col. 7, lines 4 – 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shinohara with Duvvuru because

setting up indications in response to threshold requirements aids in determining of specific buffers or network devices can handle the amount of data traversing the network.

32. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duvvuru and Wilson, and in further view of Paatela et al. (6944168) (hereinafter Paatela).

33. As per claim 9, as closely interpreted by the Examiner, Duvvuru teaches

34. retrieving each packet in order from said packet array, (e.g., col. 11, lines 1 – 30 & col. 12, lines 6 – 54), but does not specifically teach determining that said implicit resource state is normal for each packet if said explicit resource state indicator is normal; and

35. determining that said implicit resource state is low for any remaining packets in said packet array if said explicit resource state indicator is low.

36. Paatela teaches determining that said implicit resource state is normal for each packet if said explicit resource state indicator is normal, (e.g., col. 18, lines 6 – 34); and

37. determining that said implicit resource state is low for any remaining packets in said packet array if said explicit resource state indicator is low, (e.g., col. 18, lines 6 – 34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Paatela with the combine system of Duvvuru and Wilson because if a first or green threshold state is low then it is inherent that the yellow threshold state would also be low because if the hierarchy of thresholds is green, yellow and red, that would mean that before the yellow threshold state is crossed the green threshold state would have to be crossed. Therefore, if the green threshold state is low then the yellow threshold state is low.

38. Claim 12 is rejected for similar reasons as stated above.

Response to Arguments

39. Applicant's arguments, see page 6 – 8, filed 03/13/2006, with respect to Drawing Objections and 112 Rejection in regards to "1-N" have been fully considered and are persuasive. It is now understood and that the meaning of "1-N" is a range as stated by the Applicant, which can also be interpreted as "at least one". The Objections and 112 Rejection have been withdrawn in regards to this limitation.

40. Applicant's arguments filed 03/13/2006 in view of a 112 first paragraph Rejection in regards to, "reducing copying", has been fully considered but they are not persuasive. Applicant is asked to draw their attention to the Newly added description of the 112 Rejection for the response to their Remarks.

41. Applicant's arguments with respect to claims 1 – 3, 5 – 12 and 14 – 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

42. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

43. a. Aimoto U.S. Patent No. 6570876 discloses Packet switch and switching method for switching variable length packets.

44. b. Duncan U.S. Patent No. 6944129 discloses Message format and flow control for replacement of the packet control driver/packet interface dual port RAM communication.

45. c. Suzuka et al. U.S. Patent No. 5519690 discloses Communication control apparatus having function for limiting frame reception and switching system with the same.

46. d. Stone et al. U.S. Patent No. 6389489 discloses Data processing system having a fifo buffer with variable threshold value based on input and output data rates and data block size.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 571-272-3912. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David E. England
Examiner
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